

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/US2004/019068

International filing date (day/month/year)
10.06.2004

Priority date (day/month/year)
12.06.2003

International Patent Classification (IPC) or both national classification and IPC
C07D401/04, C07D413/14

Applicant
E.I. DUPONT DE NEMOURS AND COMPANY

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/019068

Box No. II Priority

1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
 - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

D1: WO 03/015519 A (SELBY THOMAS PAUL ; STEVENSON THOMAS MARTIN
(US); DU PONT (US); LAHM G) 27 February 2003 (2003-02-27)

Novelty

Document D1 discloses a process for the preparation of agriculturally suitable derivatives of 2-aminobenzoic amide by ring cleavage of 1,3-oxazinones wherein the said 1,3-oxazinones are obtained by halogenation of a suitable carboxylic acid derivative followed by reaction in 1 step with a suitable derivative of 2-aminobenzoic acid or reaction in 2 steps with a suitable derivative of isatoic anhydride (see abstract; page 1, lines 4-6; page 2, formulae 1, 2; page 6, Schemes 1-3; Examples 12, 13).

Since D1 discloses all features of the present claim 1, however not in combination, novelty has to be formally acknowledged for the subject-matter of present independent claims 1 and 10 and present dependent claims 2-9 and 11.

Inventive step

The distinguishing feature between the novel subject-matter and D1 is to be seen as the particular combination of process features, namely isatoic anhydride plus reaction in 1 step.

Since there is no evidence on file for an unexpected technical effect linked to this feature, the objective problem underlying the novel subject-matter can merely be regarded as the provision of a further process for the preparation of 1,3-oxazinones and their conversion to agriculturally suitable derivatives of 2-aminobenzoic amide within the ambit of D1.

One solution to this very general problem was the modification of the process of Scheme 2 of D1 by replacing 2-aminobenzoic acid **3** with isatoic anhydride **5** of Scheme 3.

The other possible solution was the modification of the process of Scheme 3 by replacing acid chloride **6** with carboxylic acid **4**.

Since the claimed solution consisted merely in the combination of these 2 possibilities, it could be expected that the average artisan trying to find a solution to the above posed problem would inevitably arrive at this solution (one-way situation).

Consequently, for the novel subject-matter the presence of inventive activity cannot be acknowledged.

This applies in particular, since there has not been overcome any technical prejudice by the novel subject-matter.

Industrial applicability

There is no doubt that the subject-matter of the present claims 1-11 is industrially applicable.

Formal matters, clarity

In claim 1 there is described a reaction wherein an isatoic anhydride is reacted with a carboxylic acid to give a *fused* oxazinone. However, it remains unclear, where the said "*fusion*" does come from.

Although in the present claim 1 the terms "alkyl" and "haloalkyl" are clear as such, they introduce obscurity in that they unduly extend the scope of the claimed subject-matter (breadth of the claim).

In this particular case however, this language is tolerated by the ISA, since compound no. 4 is only an auxiliary reagent which does not structurally contribute to the final reaction product.

$X=CR^6$ and $Y=CH$ (claims 8, 10) is not sufficiently supported by the description, since the worked Examples on file refer solely to $X=Y=N$.